

REMARKS

In the final Office Action mailed December 22, 2006, the Examiner noted that claims 1-11 were pending and rejected claims 1-11. Claims 1 and 5-11 have been amended, claim 2 has been canceled, claim 12 has been added and, thus, in view of the forgoing claims 1-12 remain pending for reconsideration which is requested. No new matter has been added. The Examiner's rejections and objections are traversed below.

REJECTIONS under 35 U.S.C. § 103

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as obvious over Kodaira, U.S. Patent No. 6,868,183 in view of Schneider, U.S. Patent No. 5,229,589. The Kodaira patent discusses a method of determining the type of an image scanned in to a system. The present claims are directed to a method of digitizing a questionnaire or exam, and determining if a box of either type of document is checked off, by dividing an image into areas of useful and useless information. Schneider discusses a method of determining whether a questionnaire has been marked by comparing the unaltered image of a questionnaire to the altered image of a questionnaire.

In the final Office Action at page 3, the Examiner states "Kodaira fails to explicitly teach the use of a ratio for increasing the area of the useful information." But that Schneider "discloses the use of a ratio for determining the different densities of the image in the region which include useless and useful areas." In the *Response to Arguments* the Examiner addresses the Applicant's statement in the Amendment of October 5, 2006 that the ratios of Schneider are not used to increase the area of useful information. Wherein the Office Action states:

Schneider indicates that "questionnaires are scanned for answers handmarked thereon by defining areas of interest which can be expanded in an area of interest pixel map." However as described above Schneider clearly indicates that areas can be expanded. One of ordinary skill would realize that this would mean increasing a ratio to analyze that portion of an image." [Emphasis added]

But, the areas of interest of Schneider are not expanded by use of a ratio. The areas of interest are increased by taking the coordinates of a line surrounding an area of interest and thickening the line by increasing those coordinates. See Schneider column 6 line 56 through column 7 line 6 and Fig. 5. Further, with respect to the comments on the top of page 8 of the final Office Action the Applicant wishes to point out that the x/y coordinates cited are not a ratio but an alignment point 16 of Fig. 1 of Schneider. Therefore, it would have not been obvious to increase a ratio to analyze that portion of an image.

Further, claims 1 and 5-11 have been amended to include the limitation of claim 2. Further, the discrimination of a useful area from a useless area is made by comparison of a counting result to a pre-determined number. Kodaira, col. 2, lines 5-67 and abstract do not teach or suggest “said area discrimination unit considers at least one direction in counting a number of pixels assumed to be used in displaying information about a document image represented by the image data, and discriminates the useful information area from the useless information area based on a counting result comparison to a predetermined number,” as in amended claim 1.

Further, the storage and use of data in a database as in Schneider (see *Response to Arguments* at page 8), does not suggest that the pixels are counted as the Examiner contends. For at least the reasons stated above, Kodaira and Schneider taken separately or in combination fail to teach or suggest the elements of claim 1, 5, 7 and 9 or the claims dependent therefrom.

As to claim 3, Kodaira column 14, lines 40-67 discusses an image correction unit that corrects a image data by use of a density conversions or filter processing. But it does not discuss thinning a line and therefore does not teach or suggest:

when said area discrimination unit discriminates the useful information area from the useless information area based on whether or not the number of pixels counted by considering one direction is equal to or smaller than a predetermined value, said data processing unit increases a ratio of the useful information area to the entire area by performing on at least the second partial image data a process of thinning lines having the number of pixels equal to or smaller than a predetermined value in the lines in the one direction, as recited in claim 3.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as obvious over Kodaira in view of Schneider. For at least the reasons stated above, Kodaira and Schneider taken separately or combination fail to teach or suggest “displaying at least one of a first and second partial image data obtained by increasing a ratio of useful information to an entire area by processing of the first partial image data and the second partial image data which is image data of a portion for display of the useless information area based on the discriminating ... said discriminating an area of the document image considers at least one direction in counting a number of pixels assumed to be used in displaying information about a document image represented by the image data, and discriminates the area of useful information from the area of useless information based on a counting result comparison to a predetermined number,” as recited in claim 11.

Withdrawal of the rejections is respectfully requested.

NEW CLAIM

Claim 12 is new. Support for the claim found in claims 1 and 2. The cited art fails to teach or suggest that a useful area is discriminated from useless area, by counting the number of pixels in at least one direction and comparing them to a predetermined number.

SUMMARY

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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